

ULTRIX/UWS Version 4.1

Release Note Addendum

The following notes apply to software and documentation problems that were discovered too late to document in the main body of the ULTRIX/UWS Version 4.1 *Release Notes*:

- SCSI tape drive problem and incorrect tablet puck bindings
- Providing access to the tablet's fourth puck button
- CDA Viewer only able to view DDIF files
- The dxpresto command does not work properly with dxwm
- Error messages to be ignored in cmx log file
- Omission of firmware version in DECstation 5000 Model 200 series haltaction variable release note
- Error in *Display PostScript Perspective for Software Developers*

1 SCSI Tape Drive Problem and Incorrect Tablet Puck Bindings

This section explains how to apply the following two patches to ULTRIX/UWS Version 4.1 (Rev. 52/197) systems. These patches correct a SCSI tape drive problem and a problem with incorrect tablet puck bindings.

SCSI tape drive patch

This patch should be applied on all systems that have TZ30, TLZ04, TZK10, TSZ05, TK502, or any third-party SCSI tape drives, and on all Diskless Management Services (DMS) servers that serve systems with SCSI tape drives. If you are in doubt about whether or not to apply the patch, do not hesitate to apply it. The patch will have no detrimental affect whatsoever on any system.

Tablet puck bindings patch

This patch should only be applied on DECstation 5000 Model 200 PX, 200 PXG, and 200 PXG Turbo systems that are using a tablet (Model VSXXX-AB), as well as DMS servers that are serving these systems. Note that if you mistakenly apply this patch on another system, the patch will have no detrimental affect whatsoever.

Each patch requires that you rebuild your kernel. However, if you apply both patches, you only need to rebuild your kernel once.

1.1 SCSI Tape Drive Problem

On tape utilities that use N-buffered I/O, a tape may be left at an improper position after a file is read, which may produce unpredictable results. To correct this problem, modify the SCSI tape driver by following the directions appropriate to your system:

- Standalone system (RISC)
- Standalone system (VAX)
- Remote Installation Service (RIS) server area (RISC and VAX)
- DMS server area (RISC)
- DMS server area (VAX)

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1.1.1 Standalone System (RISC)

Use the following procedure to modify the SCSI tape driver on a RISC standalone system:

1. Log in as `root` or become superuser. If your system is a DECstation 5000 Model 200 PX, PXG, or PXG Turbo with a tablet and you are logging in from the login window (`Xprompter`), you must use the second puck button to focus input on the terminal emulator windows that are started up.
2. Change your working directory to `/usr/sys/MIPS/BINARY` and run the `sum` command on the `scsi_tape.o` file to ensure that the SCSI tape driver has not already been altered by a patch by entering the following commands:

```
# cd /usr/sys/MIPS/BINARY
# sum scsi_tape.o
```

The output of the `sum` command should be 18236 152. If the `sum` command returns 28597 152, this patch has already been applied to the SCSI tape driver and you need not apply it again. If the `sum` command returns any other value, the SCSI tape driver has been modified in some other way. Do not apply this patch; instead, contact your Customer Services representative.

3. If the `sum` command returns a value of 18236 152, enter the following command:
4. To modify the SCSI tape driver, enter the following `uencode`, `sed`, `udecode` piped command. Note that the caret (^) character in this command is not a control character and that there is no white space between the two underscore characters (_).

```
# uencode scsi_tape.o.orig scsi_tape.o | sed -e 's/#!/XW^_/#!XW_ _/' | udecode
```

5. To ensure that the SCSI tape driver was correctly modified, run the `sum` command on the `scsi_tape.o` file as follows:

```
# sum scsi_tape.o
```

If the output of the `sum` command is not 28597 152, you may have entered the command in step 4 incorrectly. Therefore repeat steps 4 and 5.

6. After you have successfully modified the SCSI tape driver, change your working directory to `/sys/conf/mips` and change the version number of your operating system to Rev. 55 by entering the following commands:

```
# cd /sys/conf/mips
# cp newvers.sh newvers.sh.orig
# sed -e 's/v\ 52/v\ 55/' newvers.sh.orig > newvers.sh
```

7. To ensure that the version was correctly changed, run the `diff` command on the files `newvers.sh.orig` and `newvers.sh` by entering the following command:

```
# diff newvers.sh.orig newvers.sh
```

The `diff` command should return the following output:

```
5c5
< END { printf "char version[] = \"ULTRIX V4.1 (Rev. 52) System #&d: ",
version > "vers.c";\
---
> END { printf "char version[] = \"ULTRIX V4.1 (Rev. 55) System #&d: ",
version > "vers.c";\
```

If the `diff` command returns any other output, you may have entered the `sed` command in step 6 incorrectly. Therefore enter the following command and repeat steps 6 and 7:

```
# mv newvers.sh.orig newvers.sh
```

8. If your system is a DECstation 5000 with a tablet and you are applying the patch for the broken puck bindings, proceed to Section 1.2 .
9. If your system is not a DECstation 5000 with a tablet and you are not applying the patch for the broken puck bindings, rebuild your kernel and reboot your system by following the directions in Section 1.3 .

1.1.2 Standalone System (VAX)

Use the following procedure to modify the SCSI tape driver on a VAX standalone system:

1. Log in as root or become superuser.
2. Change your working directory to `/usr/sys/VAX/BINARY` and run the `sum` command on the `scsi_tape.o` file to ensure that the SCSI tape driver has not already been altered by a patch by entering the following commands:

```
# cd /usr/sys/VAX/BINARY
# sum scsi_tape.o
```

The output of the `sum` command should be 57671 10. If the `sum` command returns 26817 10, this patch has already been applied to the SCSI tape driver and you need not apply it again. If the `sum` command returns any other value, the SCSI tape driver has been modified in some other way. Do not apply this patch; instead, contact your Customer Services representative.

3. If the `sum` command returns a value of 57671 10, enter the following command:

```
# mv scsi_tape.o scsi_tape.o.orig
```
4. To modify the SCSI tape driver, enter the following `uencode`, `sed`, `udecode` piped command. Note that the zero (0) character in this command is the number "0" and not the capital letter "O".

```
# uencode scsi_tape.o.orig scsi_tape.o | sed -e 's:@KOK?:$@H1"/:' | udecode
```

5. To ensure that the SCSI tape driver was correctly modified, run the `sum` command on the `scsi_tape.o` file as follows:

```
# sum scsi_tape.o
```

If the output of the `sum` command is not 26817 10, you may have entered the command in step 4 incorrectly. Therefore repeat steps 4 and 5.

6. After you have successfully modified the SCSI tape driver, change your working directory to `/sys/conf/vax` and change the version number of your operating system to Rev. 55 by entering the following commands:

```
# cd /sys/conf/vax
# cp newvers.sh newvers.sh.orig
# sed -e 's/v\ 52/v\ 55/' newvers.sh.orig > newvers.sh
```

7. To ensure that the version was correctly changed, run the `diff` command on the files `newvers.sh.orig` and `newvers.sh` by entering the following command:

```
# diff newvers.sh.orig newvers.sh
```

The `diff` command should return the following output:

```
5c5
< END { printf "char version[] = \"ULTRIX V4.1 (Rev. 52) System %#d: ",
version > "vers.c";\
---
> END { printf "char version[] = \"ULTRIX V4.1 (Rev. 55) System %#d: ",
version > "vers.c";\
```

If the `diff` command returns any other output, you may have entered the `sed` command in step 6 incorrectly. Therefore enter the following command and repeat steps 6 and 7:

```
# mv newvers.sh.orig newvers.sh
```

8. Rebuild your kernel and reboot your system by following the directions in Section 1.3 .

1.1.3 RIS Server Area (RISC and VAX)

Because of the structure of the RIS server environment, it is not practical to patch the ULTRIX/UWS products that are installed there. Consequently, all RIS clients should apply the patch for the SCSI tape driver after they install from the RIS server by following the directions in Section 1.1.1 for RISC machines or Section 1.1.2 for VAX machines. If you are the RIS administrator at your site, make sure that all RIS clients receive a copy of this patch.

1.1.4 DMS Server Area (RISC)

Use the following procedure to modify the SCSI tape driver on a RISC DMS server area:

1. Log in as `root` or become superuser. If your system is a DECstation 5000 Model 200 PX, PXG, or PXG Turbo with a tablet and you are logging in from the login window (`xprompter`), you must use the second puck button to focus input on the terminal emulator windows that are started up.
2. Change your working directory to `/dlenvN/rootN.mips/sys/MIPS/BINARY` by entering the following command, replacing the italic *N* with the number of each RISC DMS area:

```
# cd /dlenvN/rootN.mips/sys/MIPS/BINARY
```

3. To ensure that the SCSI tape driver has not already been altered by a patch, run the `sum` command on the `scsi_tape.o` file by entering the following command:

```
# sum scsi_tape.o
```

The output of the `sum` command should be 18236 152. If the `sum` command returns 28597 152, this patch has already been applied to the SCSI tape driver and you need not apply it again. If the `sum` command returns any other value, the SCSI tape driver has been modified in some other way. Do not apply this patch; instead, contact your Customer Services representative.

4. If the `sum` command returns a value of 18236 152, enter the following command:

```
# mv scsi_tape.o scsi_tape.o.orig
```

5. To modify the SCSI tape driver, enter the following `uencode`, `sed`, `udecode` piped command. Note that the caret (^) character in this command is not a control character and that there is no white space between the two underscore characters (`_ _`).

```
# uencode scsi_tape.o.orig scsi_tape.o | sed -e 's/#!/XW^/_/;XW_/_/' | udecode
```

6. To ensure that the SCSI tape driver was correctly modified, run the `sum` command on the `scsi_tape.o` file as follows:

```
# sum scsi_tape.o
```

If the output of the `sum` command is not 28597 152, you may have entered the command in step 5 incorrectly. Therefore repeat steps 5 and 6.

7. After you have successfully modified the SCSI tape driver, change your working directory to `/dlenvN/rootN.mips/usr/sys/conf/mips`, replacing the italic *N* with the number of each RISC DMS area, and change the version number of your operating system to Rev. 55 by entering the following commands:

```
# cd /dlenvN/rootN.mips/usr/sys/conf/mips
# cp newvers.sh newvers.sh.orig
# sed -e 's/v\. 52/v\. 55/' newvers.sh.orig > newvers.sh
```

8. To ensure that the version was correctly changed, run the `diff` command on the files `newvers.sh.orig` and `newvers.sh` by entering the following command:

```
# diff newvers.sh.orig newvers.sh
```

The `diff` command should return the following output:

```
5c5
< END { printf "char version[] = \"ULTRIX V4.1 (Rev. 52) System %#d: ",
version > "vers.c";\
---
```



```
> END { printf "char version[] = \"ULTRIX V4.1 (Rev. 55) System #&d: ",
version > "vers.c";\
```

If the diff command returns any other output, you may have entered the sed command in step 7 incorrectly. Therefore enter the following command and repeat steps 7 and 8:

```
# mv newvers.sh.orig newvers.sh
```

9. If you are applying the patch for the broken puck buttons, proceed to Section 1.2.
10. If you are not applying the patch for the broken puck buttons, have all of your DMS clients rebuild their kernels by following the directions in Section 1.3 .

1.1.5 DMS Server Area (VAX)

Use the following procedure to modify the SCSI tape driver on a VAX DMS server area:

1. Log in as root or become superuser.
2. Change your working directory to /dlenvN/rootN.vax/usr/sys/VAX/BINARY by entering the following command, replacing the italic N with the number of each VAX DMS area:
cd /dlenvN/rootN.vax/usr/sys/VAX/BINARY
3. To ensure that the SCSI tape driver has not already been altered by a patch, run the sum command on the scsi_tape.o file by entering the following command:
sum scsi_tape.o

The output of the sum command should be 57671 10. If the sum command returns 26817 10, this patch has already been applied to the SCSI tape driver and you need not apply it again. If the sum command returns any other value, the SCSI tape driver has been modified in some other way. Do not apply this patch; instead, contact your Customer Services representative.

4. If the sum command returns a value of 57671 10, enter the following command:
mv scsi_tape.o scsi_tape.o.orig
5. To modify the SCSI tape driver, enter the following uuencode, sed, udecode piped command. Note that the zero (0) character in this command is the number "0" and not the capital letter "O".
uuencode scsi_tape.o.orig scsi_tape.o | sed -e 's:@KOK?:@H1"/:' | udecode
6. To ensure that the SCSI tape driver was correctly modified, run the sum command on the scsi_tape.o file as follows:
sum scsi_tape.o

If the output of the sum command is not 26817 10, you may have entered the command in step 5 incorrectly. Therefore repeat steps 5 and 6.

7. After you have successfully modified the SCSI tape driver, change your working directory to /dlenvN/rootN.vax/usr/sys/conf/vax, replacing the italic N with the number of each VAX DMS area, and change the version number of your operating system to Rev. 55 by entering the following commands:
cd /dlenvN/rootN.vax/usr/sys/conf/vax
cp newvers.sh newvers.sh.orig
sed -e 's/v\ 52/v\ 55/' newvers.sh.orig > newvers.sh
8. To ensure that the version was correctly changed, run the diff command on the files newvers.sh.orig and newvers.sh by entering the following command:
diff newvers.sh.orig newvers.sh

The diff command should return the following output:

```
5c5
< END { printf "char version[] = \"ULTRIX V4.1 (Rev. 52) System #&d: ",
version > "vers.c";\
---
```



```
> END {      printf "char version[] = \"ULTRIX V4.1 (Rev. 55) System #&d: ",
version > "vers.c";\
```

If the `diff` command returns any other output, you may have entered the `sed` command in step 7 incorrectly. Therefore enter the following command and repeat steps 7 and 8:

```
# mv newvers.sh.orig newvers.sh
```

9. Have all of your DMS clients rebuild their kernels by following the directions in Section 1.3 .

1.2 Incorrect Tablet Puck Bindings (DECstation 5000 Only)

ULTRIX/UWS Version 4.1 (Rev. 52/197) incorrectly maps the first three tablet puck buttons on DECstation 5000 Model 200 PX, PXG, and PXG Turbo systems. Note that the DECstation 5000 Model 200 CX is not affected by this problem. To correct this problem, you can create a C program, `fixgx.c`, which will modify the `gx` driver, by following the directions appropriate to your system:

- Standalone system
- Remote Installation Service (RIS) server area
- Diskless Management Service (DMS) server area

Because of the complexity of the patch, it is suggested that you only apply the patch if you use or plan to use a tablet.

1.2.1 Standalone System

Use the following procedure to modify the `gx` driver on a standalone system:

1. Log in as `root` or become superuser. If you are logging in from the login window (`Xprompter`), you must use the second puck button to focus input on the terminal emulator windows that are started up.
2. Change your working directory to `/usr/sys/MIPS/BINARY` and create a backup copy of the `gx` driver by entering the following commands:

```
# cd /usr/sys/MIPS/BINARY
# cp gx.o gx.o.orig
```

3. To ensure that the `gx` driver has not already been altered by a patch, run the `sum` command on the `gx.o` file as follows:

```
# sum gx.o
```

The output of the `sum` command should be 48591 120. If the `sum` command returns 29028 120, this patch has already been applied to the `gx` driver and you need not apply it again. If the `sum` command returns any other value, the `gx` driver has been modified in some other way. Do not apply this patch; instead, contact your Customer Services representative.

4. If the `sum` command returns a value of 48591 120, invoke the editor of your choice to create the C program, `fixgx.c`, and enter the following text:

```
/* Patch to fix incorrect mapping of the first 3 puck buttons of the tablet */
```

```
int data[] = {
    0x24180003,
    0x24190002,
    0x24190001,
    0x1000000d,
    0xa2390009 };
```

```
main()
```

```
{
```

```
    int fd;
```

```
    fd = open ("gx.o", 2);
```



```

lseek(fd, 022564, 0);
write(fd, &data[0], 4);

lseek(fd, 022604, 0);
write(fd, &data[1], 4);

lseek(fd, 022644, 0);
write(fd, &data[2], 12);

close(fd);
}

```

5. Compile the `fixgx.c` file by entering the following command:

```
# cc -o fixgx fixgx.c
```

6. To modify the `gx` driver, run the C program, `fixgx`, by entering the following command:

```
# ./fixgx
```

7. To ensure that the `gx` driver was correctly modified, run the `sum` command on the `gx.o` file as follows:

```
# sum gx.o
```

If the output of the `sum` command is not 29028 120, enter the following command and then repeat steps 3 through 7:

```
# cp gx.o.orig gx.o
```

8. After you have successfully modified the `gx` driver, change your working directory to `/sys/conf/mips` and change the version number of your operating system to Rev. 55 by entering the following commands. If you have already changed the version number of your operating system after installing the SCSI tape drive patch, you do not have to change the version number again. Instead, proceed immediately to Section 1.3 and reconfigure your kernel.

```
# cd /sys/conf/mips
# cp newvers.sh newvers.sh.orig
# sed -e 's/v\. 52/v\. 55/' newvers.sh.orig > newvers.sh
```

9. To ensure that the version was correctly changed, run the `diff` command on the files `newvers.sh.orig` and `newvers.sh` by entering the following command:

```
# diff newvers.sh.orig newvers.sh
```

The `diff` command should return the following output:

```

5c5
< END {          printf "char version[] = \"ULTRIX V4.1 (Rev. 52) System %#d: ",
version > "vers.c";\
---
> END {          printf "char version[] = \"ULTRIX V4.1 (Rev. 55) System %#d: ",
version > "vers.c";\

```

If the `diff` command returns any other output, you may have entered the `sed` command in step 8 incorrectly. Therefore enter the following command and repeat steps 8 and 9:

```
# cp newvers.sh.orig newvers.sh
```

10. After you have changed the version number, reconfigure your kernel by following the directions in Section 1.3 .

1.2.2 RIS Server Area

Because of the structure of the RIS server environment, it is not practical to patch the ULTRIX/UWS products that are installed there. Consequently, all DECstation 5000 Model 200 PX, 200 PXG, and 200 PXG Turbo RIS clients should apply the patch for the `gx` driver after they install from the RIS server by following the directions in Section 1.2.1 . If you are the RIS administrator at your site, make sure that these RIS clients receive a copy of this patch.

1.2.3 DMS Server Area

Use the following procedure to modify the gx driver on a DMS server area:

1. Log in as root or become superuser.
2. Change your working directory to `/dlenvN/rootN.mips/sys/MIPS/BINARY` and make a backup copy of the gx driver by entering the following commands, replacing the italic *N* with the number of each RISC DMS area:

```
# cd /dlenvN/rootN.mips/sys/MIPS/BINARY
# cp gx.o gx.o.orig
```

3. To ensure that the gx driver has not already been altered by a patch, run the `sum` command on the `gx.o` file by entering the following command:

```
# sum gx.o
```

The output of the `sum` command should be 48591 120. If the `sum` command returns 29028 120, this patch has already been applied to the gx driver and you need not apply it again. If the `sum` command returns any other value, the gx driver has been modified in some other way. Do not apply this patch; instead, contact your Customer Services representative.

4. If the `sum` command returns a value of 48591 120, invoke the editor of your choice to create the C program, `fixgx.c`, and enter the following text:

```
/* Patch to fix incorrect mapping of the first 3 puck buttons of the tablet */
```

```
int data[] = {
    0x24180003,
    0x24190002,
    0x24190001,
    0x1000000d,
    0xa2390009 };

main()
{
    int fd;

    fd = open ("gx.o", 2);
    lseek(fd, 022564, 0);
    write(fd, &data[0], 4);

    lseek(fd, 022604, 0);
    write(fd, &data[1], 4);

    lseek(fd, 022644, 0);
    write(fd, &data[2], 12);

    close(fd);
}
```

5. Compile the `fixgx.c` file by entering the following command:

```
# cc -o fixgx fixgx.c
```
6. To modify the gx driver, run the C program, `fixgx`, by entering the following command:

```
# ./fixgx
```

7. To ensure that the gx driver was correctly modified, run the `sum` command on the `gx.o` file as follows:

```
# sum gx.o
```

If the output of the `sum` command is not 29028 120, enter the following command and then repeat steps 3 through 7:

```
# cp gx.o.orig gx.o
```


8. After you have successfully modified the `gx` driver, change your working directory to `/dlenvN/rootN.mips/usr/sys/conf/mips`, replacing the italic *N* with the number of each RISC DMS area, and change the version number in the RISC DMS client areas to Rev. 55 by entering the following commands. If you have already changed the version number in the RISC DMS client areas after installing the SCSI tape drive patch, you do not have to change the version number again. Instead, proceed immediately to Section 1.3 and reconfigure your kernel.

```
# cd /dlenvN/rootN.mips/usr/sys/conf/mips
# cp newvers.sh newvers.sh.orig
# sed -e 's/v\.. 52/v\.. 55/' newvers.sh.orig > newvers.sh
```

9. To ensure that the version was correctly changed, run the `diff` command on the files `newvers.sh.orig` and `newvers.sh` by entering the following command:

```
# diff newvers.sh.orig newvers.sh
```

The `diff` command should return the following output:

```
5c5
< END {      printf "char version[] = \"ULTRIX V4.1 (Rev. 52) System #d: ",
version > "vers.c";\
---
> END {      printf "char version[] = \"ULTRIX V4.1 (Rev. 55) System #d: ",
version > "vers.c";\
```

If the `diff` command returns any other output, you may have entered the `sed` command in step 8 incorrectly. Therefore enter the following command and repeat steps 8 and 9:

```
# cp newvers.sh.orig newvers.sh
```

10. After you have successfully changed the version number, have all of your DECStation 5000 Model 200 PX, PXG, and PXG Turbo DMS clients reconfigure their kernel by following the directions in Section 1.3 .

1.3 Reconfiguring Your Kernel

In order for the patches that have been applied to work, you must reconfigure your kernel by following these steps:

1. Enter the following command, replacing the italic *MACHINE_NAME* with the name of your machine in capital letters:

```
# doconfig -c MACHINE_NAME
```

The `doconfig` command allows you to edit the configuration file. The following prompt appears immediately after you invoke the `doconfig` command with the `-c` option:

```
Do you want to edit the configuration file? (y/n) [n]:
```

Only a few configurations require that you edit the configuration file at this point. Thus, in almost all cases you should answer `no` to this prompt.

The `doconfig` program then displays the following message as it begins to rebuild your kernel:

```
*** PERFORMING SYSTEM CONFIGURATION ***
```

2. Make a backup copy of your kernel and then move the new kernel to `vmunix`.

- If your system is a RISC machine, enter the following commands, replacing the italic *MACHINE_NAME* with the name of your machine in capital letters. Note that you will have to move the generic kernel, `genvmunix`, to the `/usr` file system to make room for the backup kernel.

```
# mv /genvmunix /usr/tmp
# cp /vmunix /vmunix.orig
# mv /sys/MIPS/MACHINE_NAME/vmunix /
```

- If your system is a VAX machine, enter the following commands, replacing the italic *MACHINE_NAME* with the name of your machine in capital letters:


```
# cp /vmunix /vmunix.orig
# mv /usr/sys/VAX/MACHINE_NAME/vmunix /
```

3. Reboot your system to bring in the new kernel by doing one of the following:

- If your system is a standalone workstation, enter the `w` command to determine if any other users besides yourself are logged into your system, as follows:

```
# w
```

If you are the only user logged into your system, the `w` command will return data like the following, listing your login name in the first field:

```
eddie  p0 :0.0          1:04pm          view fixXtm2d
eddie  p1 :0.0          1:04pm          3          -csh
eddie  p2 :0.0          1:04pm          2          -csh
eddie  qf              1:03pm          -
```

If you are the only user logged into your system, reboot your system by entering the following command:

```
# /etc/shutdown -x now
```

If other users are logged into your system, the `w` command will return data like the following, listing the users' login names in the first field:

```
tony    p0 samsa        9:24am  3:31    10          -sh
tony    p1 samsa        9:24am  1:33     7          -sh
john    p2 badlands    12:47pm          2          1 -csh
eddie   p3 kafka       1:04pm          w
```

If other users are logged into your system, notify them that you are rebooting your system by entering the following command:

```
# /etc/shutdown -x +5 "Rebooting to bring in patches."
```

- If your system is a server or a time-sharing system, notify the clients or users that you are rebooting the system by entering the following command:

```
# /etc/shutdown -x +5 "Rebooting to bring in patches."
```

After the system reboots, the patches will work and you can remove the backup kernel. If your system is a RISC machine, move `genvmunix` back to the `root` file system by entering the following command:

```
# mv /usr/tmp/genvmunix /
```

2 Providing Access to the Tablet's Fourth Puck Button

This section explains how to access the tablet's fourth puck button on DECstation 3100/2100 and 5000 Model 200 series systems. You can access the tablet's fourth button three ways, depending on your system and the X Server you are running:

- By editing the `/etc/ttys` file on DECstation 3100/2100 and DECstation 5000 Model 200 systems to add the appropriate option to the `Xcfb` X Server
- By creating a C program to patch the `Xtm2d` X Server on the DECstation 5000 Model 200 PX system
- By creating a C program to patch the `Xtm` X Server on DECstation 5000 Model 200 PXG and PXG Turbo systems

Because of the complexity of the patch for the `Xtm2d` and `Xtm` X Servers, it is suggested that you only apply the patch if you need the fourth puck button. Note that the fourth puck button is only supported on the `Xtm2d`, `Xtm`, and `Xcfb` X Servers.

To access the tablet's fourth puck button, follow the directions appropriate to your system:

- Standalone system
- Remote Installation Service (RIS) server area
- Diskless Management Service (DMS) server area

2.1 Standalone System

Use the following procedure to access the tablet's fourth puck button on a standalone system:

1. To determine which X Server your system is running, run the `egrep` command on the `/etc/ttys` file as follows:

```
# egrep "Xcfb|Xtm|Xtm2d" /etc/ttys
```

The `egrep` command will return output like the following:

```
:0 "/usr/bin/login -P /usr/bin/Xprompter -C /usr/bin/dxsession -e" none on secure window="/usr/bin/Xcfb"
```

The name of the X Server will be at or near the end of the line just before the quotation marks. In the preceding example, the X Server is `Xcfb`.

2. Based on the output of the `egrep` command, proceed to the section which corresponds to the X Server your system is running and follow the directions there:
 - Activating the Fourth Puck Button on the `Xcfb` X Server
 - Patching the `Xtm2d` X Server
 - Patching the `Xtm` X Server

2.1.1 Activating the Fourth Puck Button on the `Xcfb` X Server

Use the following procedure to activate the tablet's fourth puck button on a system running the `Xcfb` X Server:

1. Log in as `root` or become `superuser`.
2. Invoke the editor of your choice on the `/etc/ttys` file and search for the line that ends with `Xcfb`. The line will look like the following:

```
:0 "/usr/bin/login -P /usr/bin/Xprompter -C /usr/bin/dxsession -e" none on secure window="/usr/bin/Xcfb"
```

3. Insert the characters `-btn 4` after the characters `Xcfb` and before the ending quotation marks. The line should now look like this:

```
:0 "/usr/bin/login -P /usr/bin/Xprompter -C /usr/bin/dxsession -e" none on secure window="/usr/bin/Xcfb -btn
```

4. Write and quit the file.
5. After you have edited the `ttys` file, change your working directory to `/usr/etc` and change the version number of ULTRIX Worksystem Software to Rev. 198 by entering the following commands:

```
# cd /usr/etc
# cp uwsvers uwsvers.orig
# sed -e 's/197/198/' uwsvers.orig > uwsvers
```

6. To ensure that the version was correctly changed, run the `diff` command on the files `uwsvers.orig` and `uwsvers` by entering the following command:

```
# diff uwsvers.orig uwsvers
```

The `diff` command should return the following output:

```
3c3
< echo "UWS V4.1 (Rev. 197)"
---
> echo "UWS V4.1 (Rev. 198)"
```

If the `diff` command returns any other output, you may have entered the `sed` command in step 5 incorrectly. Therefore enter the following command and repeat steps 5 and 6:

```
# cp uwsvers.orig uwsvers
```

7. To access the fourth puck button, reboot your system by doing one of the following:
 - If your system is a standalone workstation, enter the `w` command to determine if any other users besides yourself are logged into your system, as follows:


```
# w
```

If you are the only user logged into your system, the `w` command will return data like the following, listing your login name in the first field:

```
eddie  p0 :0.0          1:04pm          view fixXtm2d
eddie  p1 :0.0          1:04pm          3          -csh
eddie  p2 :0.0          1:04pm          2          -csh
eddie  qf               1:03pm          -
```

If you are the only user logged into your system, reboot your system by entering the following command:

```
# /etc/shutdown -r now
```

If other users are logged into your system, the `w` command will return data like the following, listing the users' login names in the first field:

```
tony   p0 samsa         9:24am  3:31      10          -sh
tony   p1 samsa         9:24am  1:33       7          -sh
john   p2 badlands     12:47pm          2          1 -csh
eddie  p3 kafka        1:04pm          w
```

If other users are logged into your system, notify them that you are rebooting your system by entering the following command:

```
# /etc/shutdown -r +5 "Rebooting to access fourth button."
```

- If your system is a server or a time-sharing system, notify the clients or users that you are rebooting the system by entering the following command:

```
# /etc/shutdown -r +5 "Rebooting to access fourth button."
```

2.1.2 Patching the Xtm2d X Server

To access the tablet's fourth puck button on a system that is running the Xtm2d X Server, create a C program, `fixXtm2d.c`, that will modify the Xtm2d X Server, by following these steps:

1. Log in as `root` or become superuser.
2. Change your working directory to `/usr/bin` and create a backup copy of the Xtm2d X Server by entering the following commands:

```
# cd /usr/bin
# cp Xtm2d Xtm2d.orig
```

3. To ensure that the Xtm2d X Server has not already been altered by a patch, run the `sum` command on the Xtm2d X Server as follows:

```
# sum Xtm2d
```

The output of the `sum` command should be `36201 1640`. If the `sum` command returns `48532 1640`, this patch has already been applied to the Xtm2d X Server and you need not apply it again. If the `sum` command returns any other value, the Xtm2d X Server has been modified in some other way. Do not apply this patch; instead, contact your Customer Services representative.

4. If the `sum` command returns a value of `36201 1640`, invoke the editor of your choice to create the C program, `fixXtm2d.c`, and enter the following text:

```
/* Patch /usr/bin/Xtm2d to allow access to the fourth puck button */
```

```
#include <stdio.h>
#include <sys/file.h>
```

```
struct patch {
    unsigned int faddr;
    unsigned int fdata;
} data[] =
{
    0007620, 0x3c180302,
```



```

0007624, 0x24190504,
0007630, 0x37180100,
0007650, 0xafb9002c,
0007654, 0xafb80028,
0007704, 0x24060005,
0, 0x0,
};

main()
{
    int fd;
    struct patch *pp = data;

    fd = open ("Xtm2d", O_RDWR, 0);

    while (pp->faddr) {

        lseek(fd, pp->faddr, 0);
        write(fd, &pp->fdata, 4);
        pp++;
    }

    close(fd);
}

```

5. Compile the fixXtm2d.c file by entering the following command:

```
# cc -o fixXtm2d fixXtm2d.c
```

6. Because the Xtm2d X Server is a large, demand-paged executable, you must be in single-user mode to modify it. Bring your system down to single-user mode by doing one of the following:

- If your system is a standalone workstation, enter the w command to determine if any other users besides yourself are logged into your system, as follows:

```
# w
```

If you are the only user logged into your system, the w command will return data like the following, listing your login name in the first field:

```

eddie  p0 :0.0          1:04pm          view fixXtm2d
eddie  p1 :0.0          1:04pm          3          -csh
eddie  p2 :0.0          1:04pm          2          -csh
eddie  qf              1:03pm          -

```

If you are the only user logged into your system, bring your system down to single-user mode by entering the following command:

```
# /etc/shutdown now
```

If other users are logged into your system, the w command will return data like the following, listing the users' login names in the first field:

```

tony   p0 samsa        9:24am  3:31      10          -sh
tony   p1 samsa        9:24am  1:33       7          -sh
john   p2 badlands    12:47pm          2          1 -csh
eddie  p3 kafka        1:04pm          w

```

If other users are logged into your system, notify them that you are shutting down your system by entering the following command:

```
# /etc/shutdown +5 "Enabling access to fourth puck button. Back up in 30 minutes."
```

- If your system is a server or a time-sharing system, notify the clients or users that you are shutting down the system by entering the following command:

```
# /etc/shutdown +5 "Enabling access to fourth puck button. Back up in 30 minutes."
```

7. Change your working directory to /usr/bin by entering the following command:

```
# cd /usr/bin
```


8. To modify the Xtm2d X Server, run the C program, fixXtm2d, by entering the following command:

```
# ./fixXtm2d
```
9. To ensure that the Xtm2d X Server was correctly modified, run the sum command on the Xtm2d X Server as follows:

```
# sum Xtm2d
```

If the output of the sum command is not 48532 1640, you may have mistyped the C program. Enter the following command and then repeat steps 3 through 5 and 7 through 9:

```
# cp Xtm2d.orig Xtm2d
```
10. After you have successfully modified the X Server, change your working directory to /usr/etc and change the version number of ULTRIX Worksystem Software to Rev. 198 by entering the following commands:

```
# cd /usr/etc
# cp uwsvers uwsvers.orig
# sed -e 's/197/198/' uwsvers.orig > uwsvers
```
11. To ensure that the version was correctly changed, run the diff command on the files uwsvers.orig and uwsvers by entering the following command:

```
# diff uwsvers.orig uwsvers
```

The diff command should return the following output:

```
3c3
< echo "UWS V4.1 (Rev. 197)"
---
> echo "UWS V4.1 (Rev. 198)"
```

If the diff command returns any other output, you may have entered the sed command in step 10 incorrectly. Therefore enter the following command and repeat steps 10 and 11:

```
# cp uwsvers.orig uwsvers
```
12. After you have successfully changed the version number, bring your system back to multi-user mode by typing CTRL-D.

2.1.3 Patching the Xtm X Server

To access the tablet's fourth puck button on a system that is running the Xtm X Server, create a C program, fixXtm.c, that will modify the Xtm X Server, by following these steps:

1. Log in as root or become superuser.
2. Change your working directory to /usr/bin and create a backup copy of the Xtm X Server by entering the following commands:

```
# cd /usr/bin
# cp Xtm Xtm.orig
```
3. To ensure that the Xtm X Server has not already been altered by a patch, run the sum command on the Xtm X Server as follows:

```
# sum Xtm
```

The output of the sum command should be 57680 2132. If the sum command returns 14153 2132, this patch has already been applied to the Xtm X Server and you need not apply it again. If the sum command returns any other value, the Xtm X Server has been modified in some other way. Do not apply this patch; instead, contact your Customer Services representative.
4. If the sum command returns a value of 57680 2132, invoke the editor of your choice to create the C program, fixXtm.c, and enter the following text:

```
/* Patch /usr/bin/Xtm to allow access to the fourth puck button */
```



```

#include <stdio.h>
#include <sys/file.h>

struct patch {
    unsigned int faddr;
    unsigned int fdata;
} data[] =
{
    0007750, 0x3c180302,
    0007754, 0x24190504,
    0007760, 0x37180100,
    0010000, 0xafb9002c,
    0010004, 0xafb80028,
    0010034, 0x24060005,
    0,      0x0,
};

main()
{
    int fd;
    struct patch *pp = data;

    fd = open ("Xtm", O_RDWR, 0);

    while (pp->faddr) {
        lseek(fd, pp->faddr, 0);
        write(fd, &pp->fdata, 4);
        pp++;
    }

    close(fd);
}

```

5. Because the Xtm X Server is a large, demand-paged executable, you must be in single-user mode to modify it. Bring your system down to single-user mode by doing one of the following:

- If your system is a standalone workstation, enter the `w` command to determine if any other users besides yourself are logged into your system, as follows:

```
# w
```

If you are the only user logged into your system, the `w` command will return data like the following, listing your login name in the first field:

```

eddie  p0 :0.0      1:04pm      view fixXtm2d
eddie  p1 :0.0      1:04pm      3      -csh
eddie  p2 :0.0      1:04pm      2      -csh
eddie  qf          1:03pm

```

If you are the only user logged into your system, bring your system down to single-user mode by entering the following command:

```
# /etc/shutdown now
```

If other users are logged into your system, the `w` command will return data like the following, listing the users' login names in the first field:

```

tony    p0 samsa      9:24am  3:31      10      -sh
tony    p1 samsa      9:24am  1:33      7      -sh
john    p2 badlands  12:47pm          2      1 -csh
eddie   p3 kafka     1:04pm

```

If other users are logged into your system, notify them that you are shutting down your system by entering the following command:

```
# /etc/shutdown +5 "Enabling access to fourth puck button. Back up in 30 minutes."
```


- If your system is a server or a time-sharing system, notify the clients or users that you are shutting down the system by entering the following command:

```
# /etc/shutdown +5 "Enabling access to fourth puck button. Back up in 30 minutes."
```

6. Change your working directory to /usr/bin by entering the following command:

```
# cd /usr/bin
```

7. Compile the fixXtm.c file by entering the following command:

```
# cc -o fixXtm fixXtm.c
```

8. To modify the Xtm X Server, run the C program, fixXtm, by entering the following command:

```
# ./fixXtm
```

9. To ensure that the Xtm X Server was correctly modified, run the sum command on the Xtm X Server as follows:

```
# sum Xtm
```

If the output of the sum command is not 14153 2132, you may have mistyped the C program. Enter the following command and then repeat steps 3 through 5 and 7 through 9:

```
# cp Xtm.orig Xtm
```

10. After you have successfully modified the X Server, change your working directory to /usr/etc and change the version number of ULTRIX Worksystem Software to Rev. 198 by entering the following commands:

```
# cd /usr/etc
```

```
# cp uwsvers uwsvers.orig
```

```
# sed -e 's/197/198/' uwsvers.orig > uwsvers
```

11. To ensure that the version was correctly changed, run the diff command on the files uwsvers.orig and uwsvers by entering the following command:

```
# diff uwsvers.orig uwsvers
```

The diff command should return the following output:

```
3c3
```

```
< echo "UWS V4.1 (Rev. 197)"
```

```
---
```

```
> echo "UWS V4.1 (Rev. 198)"
```

If the diff command returns any other output, you may have entered the sed command in step 10 incorrectly. Therefore enter the following command and repeat steps 10 and 11:

```
# cp uwsvers.orig uwsvers
```

12. After you have successfully changed the version number, bring your system back to multi-user mode by typing CTRL-D.

2.2 RIS Server Area

Because of the structure of the RIS server environment, it is not practical to patch the ULTRIX/UWS products that are installed there. Consequently, all DECstation 3100/2100 and DECstation 5000 Model 200 Series RIS clients should follow the directions in Section 2.1 after they install from the RIS server. If you are the RIS administrator at your site, make sure that these RIS clients receive a copy of this patch.

2.3 DMS Server Area

Use the following procedures to modify the Xtm2d and Xtm X Servers on a DMS server area. Note that all RISC DMS clients should follow the directions in Section 2.1 to determine if they are running the Xcfb X Server. If they are running the Xcfb X Server and want to activate the tablet's fourth puck button, they should follow the directions in Section 2.1.1 .

1. Shutdown and halt all DECstation 5000 Model 200 PX, PXG, and PXG Turbo DMS clients.
2. Log in to the DMS server as root or become superuser.
3. Change your working directory to /dlenv*N*/root*N*.mips/usr/bin by entering the following command, replacing the italic *N* with the number of each RISC DMS area:

```
# cd /dlenvN/rootN.mips/usr/bin
```
4. To patch the Xtm2d X Server follow these steps:
 - a. To ensure that the Xtm2d X Server has not already been altered by a patch, run the sum command on the Xtm2d X Server as follows:

```
# sum Xtm2d
```

The output of the sum command should be 36201 1640. If the sum command returns 48532 1640, this patch has already been applied to the Xtm2d X Server and you need not apply it again. If the sum command returns any other value, the Xtm2d X Server has been modified in some other way. Do not apply this patch; instead, contact your Customer Services representative.
 - b. If the sum command returns a value of 36201 1640, invoke the editor of your choice to create the C program, fixXtm2d.c, and enter the following text:

```
/* Patch /usr/bin/Xtm2d to allow access to the fourth puck button */

#include <stdio.h>
#include <sys/file.h>

struct patch {
    unsigned int faddr;
    unsigned int fdata;
} data[] =
{
    0007620, 0x3c180302,
    0007624, 0x24190504,
    0007630, 0x37180100,
    0007650, 0xafb9002c,
    0007654, 0xafb80028,
    0007704, 0x24060005,
    0,          0x0,
};

main()
{
    int fd;
    struct patch *pp = data;

    fd = open ("Xtm2d", O_RDWR, 0);

    while (pp->faddr) {

        lseek(fd, pp->faddr, 0);
        write(fd, &pp->fdata, 4);
        pp++;
    }

    close(fd);
}

```
 - c. Compile the fixXtm2d.c file by entering the following command:

```
# cc -o fixXtm2d fixXtm2d.c
```
 - d. To modify the Xtm2d X Server, run the C program, fixXtm2d, by entering the following command. Note that you do not have to bring the DMS server down to single-user mode to execute this command.

```
# ./fixXtm2d
```


- e. To ensure that the Xtm2d X Server was correctly modified, run the `sum` command on the Xtm2d X Server file as follows:

```
# sum Xtm2d
```

If the output of the `sum` command is not 48532 1640, you may have mistyped the C program. Enter the following command and then repeat steps a through e:

```
# cp Xtm2d.orig Xtm2d
```

5. To patch the Xtm X Server, follow these steps:

- a. To ensure that the Xtm X Server has not already been altered by a patch, run the `sum` command on the Xtm X Server as follows:

```
# sum Xtm
```

The output of the `sum` command should be 57680 2132. If the `sum` command returns 14153 2132, this patch has already been applied to the Xtm X Server and you need not apply it again. If the `sum` command returns any other value, the Xtm X Server has been modified in some other way. Do not apply this patch; instead, contact your Customer Services representative.

- b. If the `sum` command returns a value of 57680 2132, invoke the editor of your choice to create the C program, `fixXtm.c`, and enter the following text:

```
/* Patch /usr/bin/Xtm to allow access to the fourth puck button */
```

```
#include <stdio.h>
```

```
#include <sys/file.h>
```

```
struct patch {
```

```
    unsigned int faddr;
```

```
    unsigned int fdata;
```

```
} data[] =
```

```
{
```

```
    0007750, 0x3c180302,
```

```
    0007754, 0x24190504,
```

```
    0007760, 0x37180100,
```

```
    0010000, 0xafb9002c,
```

```
    0010004, 0xafb80028,
```

```
    0010034, 0x24060005,
```

```
    0, 0x0,
```

```
};
```

```
main()
```

```
{
```

```
    int fd;
```

```
    struct patch *pp = data;
```

```
    fd = open ("Xtm", O_RDWR, 0);
```

```
    while (pp->faddr) {
```

```
        lseek(fd, pp->faddr, 0);
```

```
        write(fd, &pp->fdata, 4);
```

```
        pp++;
```

```
    }
```

```
    close(fd);
```

```
}
```

- c. Compile the `fixXtm.c` file by entering the following command:

```
# cc -o fixXtm fixXtm.c
```

- d. To modify the Xtm X Server, run the C program, `fixXtm`, by entering the following command. Note that you do not have to bring the DMS server down to single-user mode to execute this command.


```
# ./fixXtm
```

- e. To ensure that the Xtm X Server was correctly modified, run the `sum` command on the Xtm X Server file as follows:

```
# sum Xtm
```

If the output of the `sum` command is not 14153 2132, You may have mistyped the C program. Enter the following command and then repeat steps a through e:

```
# cp Xtm.orig Xtm
```

6. After you have successfully modified the Xtm2d and the Xtm X Servers, change your working directory to `/usr/etc` and change the version number of ULTRIX Worksystem Software to Rev. 198 by entering the following commands:

```
# cd /usr/etc
# cp uwsvers uwsvers.orig
# sed -e 's/197/198/' uwsvers.orig > uwsvers
```

7. To ensure that the version was correctly changed, run the `diff` command on the files `uwsvers.orig` and `uwsvers` by entering the following command:

```
# diff uwsvers.orig uwsvers
```

The `diff` command should return the following output:

```
3c3
< echo "UWS V4.1 (Rev. 197)"
---
> echo "UWS V4.1 (Rev. 198)"
```

If the `diff` command returns any other output, you may have entered the `sed` command in step 6 incorrectly. Therefore enter the following command and repeat steps 6 and 7:

```
# cp uwsvers.orig uwsvers
```

8. After you have successfully changed the version number, each DECstation 5000 Model 200 PX, PXG and PXG Turbo DMS client must reboot to bring in the modified X Servers.

3 CDA Viewer Only Able to View DDIF Files

The CDA Viewer (`dxvdoc`) will only display files formatted in DDIF. If you attempt to use `dxvdoc` to display a file that is not formatted in DDIF, a message box with errors similar to the following will appear:

```
error reading document
CDA read fail
```

In addition to these error messages, diagnostic messages like the following may appear in the CDA Viewer's diagnostic information box:

```
Unexpected error converting aggregate
Expected a DDIF$_DSC aggregate
```

To work around this problem, invoke the `cdoc` utility to convert your file to DDIF format before viewing it with `dxvdoc`. For example, to convert a DTIF file entitled `DTIF_file` to a DDIF file entitled `DDIF_file` that you can view with the CDA Viewer, you would type the following commands:

```
% cdoc -s dtif -d ddif -o DDIF_file DTIF_file
% dxvdoc DDIF_file
```

To convert a text file entitled `TEXT_file` to a DDIF file entitled `DDIF_file` that you can view with the CDA Viewer, you would type the following commands:

```
% cdoc -s text -d ddif -o DDIF_file TEXT_file
% dxvdoc DDIF_file
```

For more information on `cdoc`(1) and `dxvdoc`(1X) see the *Reference Pages*.

4 The dxpresto Command Does Not Work Properly with dxwm

The `/usr/etc/dxpresto` command does not work properly with the DECwindows Window Manager (`/usr/bin/dxwm`). To work around this problem, you can either use the character-cell command `/usr/etc/presto` or the `mwm` window manager which is available on a separate distribution (OSFMOTIF/ULT QA-YMCAA-H5 for RISC, QA-YMBAA-H5 for VAX). The `dxpresto` command will be fixed in the next release of the ULTRIX operating system. For more information on `presto(8)` and `dxpresto(8)`, see the *Reference Pages*.

5 Error Messages to be Ignored in cmx Log File (DECsystem 5500 Only)

On a DECsystem 5500, when the `/usr/field/cmx` exerciser is running with loop back connectors attached and several other system exercisers are also running, the `cmx` log files in the `/usr/field` directory may record informational error messages like the following, which can be ignored:

```
cmx: Started cmx exerciser - testing:
tty00 tty01 tty02 tty03 tty04 tty05 tty06 tty07 tty08 tty09 tty10 tty11 tty12 tt
y13 tty14 tty15
```

```
Thu Nov 29 14:18:43 1990
cmx: Read data timeout on tty12, brate:9600 xmit#:58 rcv#:55
```

```
Thu Nov 29 14:18:43 1990
cmx: Read data timeout on tty13, brate:9600 xmit#:58 rcv#:50
```

6 Omission of firmware version in DECstation 5000 Model 200 Series haltaction variable Release Note

Although not explicitly stated, note 2.8.3 in the *Release Notes* refers only to DECstation 5000 Model 200 series systems that are booting from firmware prior to Version 5.3.

If the firmware on your DECstation 5000 Model 200 series system is Version 5.3 or higher, ignore that release note. Instead, refer to note 2.8.1.2.2.

7 Error in Display PostScript Perspective for Software Developers

Page 8 of the first section of the Display PostScript document *Perspective for Software Developers* contains an incorrect phone number for the Adobe Training Support Line. Call the Adobe Developer's Support Line at (415) 961-4111 for the current Adobe Training Support Line telephone number.